
CALDWELL COUNTY

(Caldwell County Water Service Area Map)

- Estimated 1999 population of 13,300--85% on public water
- Estimated 2020 population of 13,700--92% on public water
- 195 miles of water lines, with plans for 45 additional miles
- Estimated funding needs for public water 2000-2005--\$7,485,000
- Estimated funding needs for public water 2006-2020--\$0

Caldwell County had an estimated population of 13,331 (5,707 households) in 1999 with a projected population of 13,741 (6,123 households) in 2020. Public water is provided to over 5,000 customers, or about 85 percent of the county's residents. In areas of the county not served by public water, about 5 of 8 households rely on private domestic wells and 3 of 8 households rely on other sources. About 410 households will be added to public water service through new line extensions in 2000-2020.

Estimated Costs - Proposed Projects, 2000-2005

COUNTY/System		New Customers		Rehab	Source	Treatment	Tanks/ Pumps	Total
	Miles	Number	Cost in \$1000	in \$1000	in \$1000	in \$1000	in \$1000	in \$1000
CALDWELL								-
Caldwell Co. W/D	43	198	1,367					1,367
Princeton		212	358	590		3,800	1,000	5,748
Fredonia							370	370
TOTAL	43	410	1,725	590		3,800	1,370	7,485

PUBLIC WATER SYSTEMS

The residents of Caldwell County are presently provided water by a total of six public water systems: 2 municipal systems and 4 water districts. Of these systems, the three primary providers have their base of operations within the county. Those systems are the Caldwell County Water District, Princeton Water Department and the City of Fredonia Water Department. A small number of the Caldwell County residents are also serviced by systems located outside of their County. The South Hopkins Water District services approximately 102 customers in the eastern portion of the county, while Lake Barkley Water District serves 43 or so customers in southern Caldwell and the Lyon County Water District serves about 17 customers in the western part of the county.

WATER SERVICE AREAS

CALDWELL COUNTY

Kentucky

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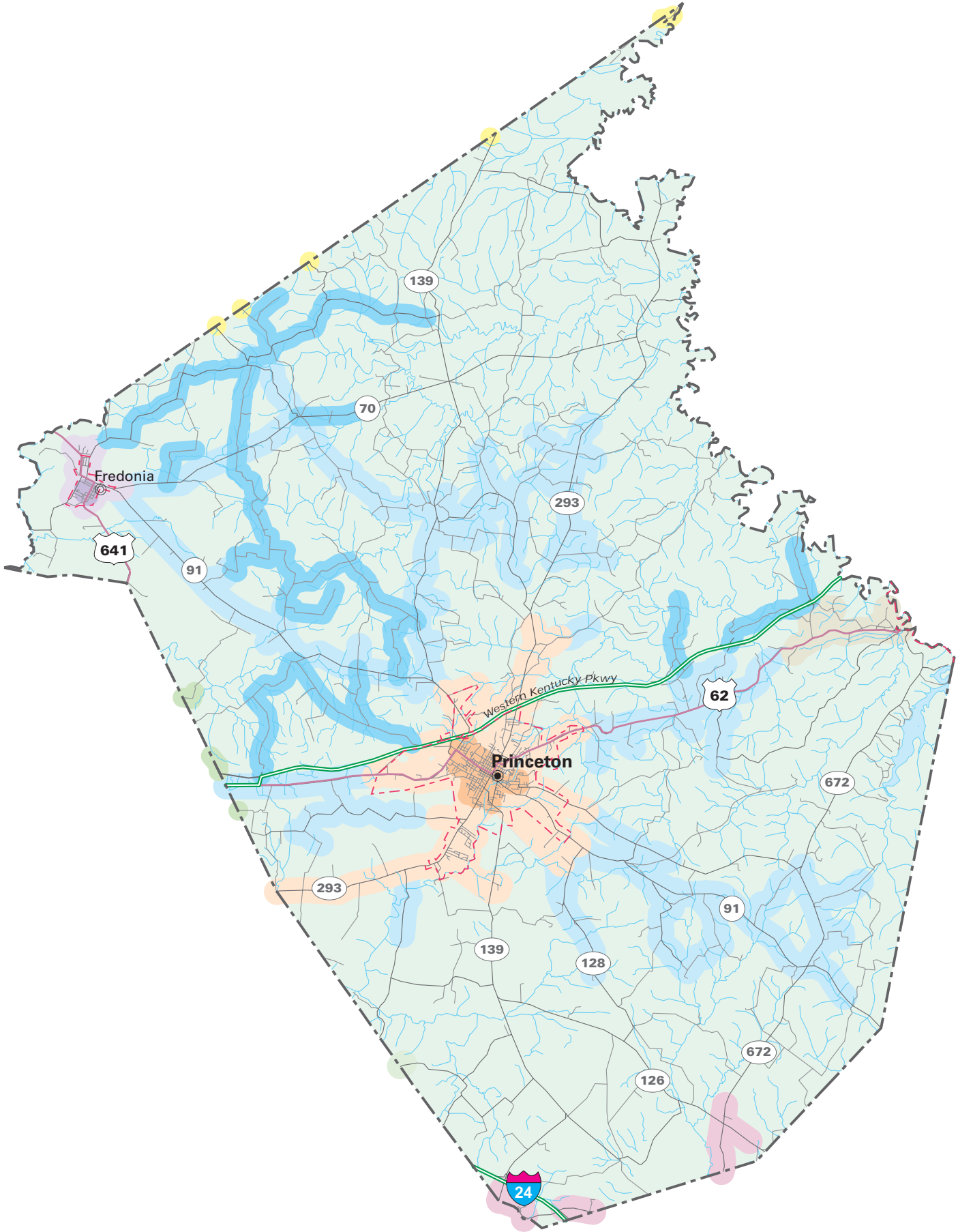
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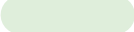
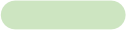


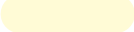

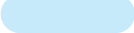



Data Collection & GIS Input By:
Kentucky Area Development Districts



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WATER SERVICE STATUS BY OWNER

EXISTING SERVICE AREA	PROPOSED SERVICE AREA	
		SOUTH HOPKINS WATER DISTRICT
		PRINCETON WATER & WASTEWATER COMMISSION
		LYON COUNTY WATER DISTRICT
		FREDONIA WATER DEPARTMENT
		CRITTENDEN-LIVINGSTON COUNTY WATER DISTRICT
		CALDWELL COUNTY WATER DISTRICT
		BARKLEY LAKE WATER DISTRICT

CALDWELL COUNTY WATER DISTRICT

PWSID: 0170528
System Type: COMMUNITY
Owner Type: WATER DISTRICT
Surface Source:
Purchase Source:
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD): 0.00
Percent Daily Average Production: 0.00
Total Tank Storage Capacity (gallons): 370,000.00
Total Service Connections: 769.00
Number of Employees: 2.70
Treatment Operator Class: 2D
Distribution Operator Class:
Customer Rate for 1,000 Gallons: 7.12
O/M costs 1997: 177,304.00
O/M costs per Service Connection: 242.88
Net Revenue 1997: 62,929.00
Total Water Produced 1997 (gallons): 0.00
Water Sold 1997 (gallons): 30,436,000.00
Unaccounted-for Water 1997 (%): 19.22

The Caldwell County Water District was initially formed in 1987 but was not able to extend services to any residents until 1991 when it was able to serve its first 98 customers. Since that time several projects have been completed, resulting in a customer base of 760.

Presently the district has two additional projects that have been approved for funding (and are yet to be completed) that will add 460 households to its customer base. The District currently purchases treated water from the city of Princeton for \$1.21 per 1,000 gallons. On an average day, the system uses approximately 101,000 gallons of water, with the proposed additions, that usage amount is expected to rise to a level of around 160,000 gallons per day. The district's distribution system and storage is considered to be adequate to support current usage levels (including upcoming project). The district's storage system consists of three tanks located at various points within its territory and has a total storage capacity of 370,000 gallons. Water loss for the district is minimal and mainly due to the flushing of the lines but there are a few areas that experience pressure problems. The calculated cost for 5,000 gallons of treated water (residential usage) is currently \$35.60 which when compared to other districts within the Pennyryle is considered to be at the high end.

PRINCETON WATER & WASTEWATER COMMISSION

PWSID: 0170360
System Type:..... COMMUNITY
Owner Type:..... WATER DISTRICT
Surface Source:..... LAKE BARKLEY
Purchase Source:
Well Source: Yes
Sells Water to:
Treatment Plant Capacity (MGD):..... 2.00
Percent Daily Average Production: 66.00
Total Tank Storage Capacity (gallons):..... 600,000.00
Total Service Connections: 3,020.00
Number of Employees:..... 11.00
Treatment Operator Class:..... 2D
Distribution Operator Class: 3A
Customer Rate for 1,000 Gallons:..... 2.25
O/M costs 1997:..... Not available
O/M costs per Service Connection: Not available
Net Revenue 1997:..... Not available
Total Water Produced 1997 (gallons):..... Not available
Water Sold 1997 (gallons):..... Not available
Unaccounted-for Water 1997 (%): Not available

The Princeton Municipal Water & Sewer Commission gets its water from the nearby Lake Barkley and according to a Caldwell County water supply study completed in 1995 will continue to be an adequate source in terms of both quality and quantity. Their treatment facility has a capacity of 2 million gallons per day and is currently treating approximately 1,480,750 gallons of water per day or about 75% of its' capacity. Along with servicing the water needs of the citizens of Princeton, the Princeton Water System also sells treated water to the Lyon County Water District and the Caldwell County Water District. Due to the increased needs of the Caldwell County Water District and the growth of its own customer base, Princeton has begun to seek funds for the expansion of its treatment facility to 3.0 million gallons per day. The system presently has a storage capacity of 2.0 million gallons, which is held in 3 tanks at various locations within its system boundaries and at the clearwell located at the treatment plant. The city's distribution system is in fairly good condition and according to the county's Water Supply Plan recorded a loss or non-revenue water usage of 17% which is slightly above the normal limit of 15%.

Currently the system serves about 3,765 customers in and around the city of Princeton. The average residential customer of the system is charged \$11.25 for 5,000 gallons of usage,

which is considered extremely reasonable when compared to other municipal systems within the Pennyrile.

As mentioned previously, the growth in the demand from the other systems supplied by the Princeton water system coupled with the expected growth that will take place within the city, will severely hamper the treatment facility's ability to provide an adequate amount of treated water without expansion of the plant.

FREDONIA WATER DEPARTMENT

PWSID: 0170146
System Type: COMMUNITY
Owner Type: MUNICIPAL
Surface Source:
Purchase Source:
Well Source:
Sells Water to:
Treatment Plant Capacity (MGD): 0.00
Percent Daily Average Production: 0.00
Total Tank Storage Capacity (gallons): 50,000.00
Total Service Connections: 325.00
Number of Employees: 2.00
Treatment Operator Class: 1D
Distribution Operator Class:
Customer Rate for 1,000 Gallons: 5.18
O/M costs 1997: Not available
O/M costs per Service Connection: Not available
Net Revenue 1997: Not available
Total Water Produced 1997 (gallons): Not available
Water Sold 1997 (gallons): Not available
Unaccounted-for Water 1997 (%): Not available

The City of Fredonia Water system purchases treated water from the city of Eddyville, which is located in Lyon County, just 8 miles south of the city along US highway 641. Currently the system provides service to 325 customers of which 308 are residential. The current residential customer is charged \$25.88 for 5,000 gallons of treated water. On an average day the system consumes 59,000 gallons of water. Of this amount, according to the Caldwell County water supply plan, 23.4% is categorized as non-revenue producing. This figure generally includes the water used to periodically flush the system. The City currently has one storage facility that holds approximately 50,000 gallons of water. The distribution systems is somewhat aged and is experiencing problems with low pressure and volume due to inadequate sized lines in various parts of the city. While having a tremendous need for

additional storage capacity the city's existing storage tank is in need of substantial repair and painting.

PRIVATE DOMESTIC SYSTEMS

About 2,000 people in Caldwell County rely on private domestic water supplies: 1,300 on wells and 700 on other sources.

In the southern and western two-thirds of Caldwell County more than three-quarters of the drilled wells in the uplands are adequate for a domestic supply. Yields as high as 50 gpm have been reported from wells penetrating large solution channels or fault zones. In the low-lying areas of Eddy Creek most wells are inadequate for domestic use unless the well intercepts a major solution opening in the limestone in which the yield could be very large. Ground water in the sandstone and shale-rich northeastern third of the county is not as prevalent as in the rest of the county which is predominately limestone. Most wells in the northeastern part of the county are inadequate for a domestic supply, however some wells in sandstone formations yield enough water for a domestic supply when located in areas bordering streams.

Springs with flows ranging from a few gallons per minute to 2,000 gpm are found in the county. Minimum flow generally occurs in early fall, maximum flows in late winter.
